



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,850	11/01/2000	Jae-eun Jang	030681-253	9540

21839 7590 11/15/2002

BURNS DOANE SWECKER & MATHIS L L P  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER

YUN, JURIE

ART UNIT PAPER NUMBER

2882

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/702,850	JANG, JAE-EUN	
	Examiner	Art Unit	
	Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                                              |                                                                             |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5-7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Masuda et al. (USPN 4,424,467).

3. With respect to claims 1 and 6, Masuda et al. disclose a high-brightness phosphor screen (12), comprising: a luminescent material (13) for emitting light of a predetermined color, used for color image display; and a ZnO:Zn phosphor (column 4, line 12) capable of enhancing the brightness of the display, wherein the mixing ratio of the luminescent material to the ZnO:Zn phosphor is varied according to a desired level of brightness (column 3, lines 4-20). The method for forming the high-brightness phosphor screen is disclosed in column 3, lines 20+.

4. With respect to claims 2 and 7, Masuda et al. disclose the luminescent material is a blue or green light-emitting phosphor (column 3, lines 20+).

5. With respect to claims 5 and 10, Masuda et al. disclose the amount of the ZnO:Zn phosphor added is 20% or less by weight based on the weight of the luminescent material (column 3, lines 4-20).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (USPN 4,424,467) as applied to claims 1 and 6 above, and further in view of Matu (JP 52 030276).

8. With respect to claims 3 and 8, Masuda et al. do not disclose the blue light-emitting phosphor is at least one sulfide based phosphor selected from the group consisting of ZnS:Ag,Cl, ZnS:Ag,Cl,Al, (Zn,Cd)S:Ag, ZnS:Ag,Cl,Al,Mg, (Zn,Cd)S:Ag,Cl, (Zn,Cd)S:Ag,Cl,Al, and (Zn,Cd)S:Ag,Cl,Mg. Matu discloses this (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Masuda et al. invention and disclose the blue light-emitting phosphor is at least one sulfide based phosphor selected from the group consisting of ZnS:Ag,Cl, ZnS:Ag,Cl,Al, (Zn,Cd)S:Ag, ZnS:Ag,Cl,Al,Mg, (Zn,Cd)S:Ag,Cl, (Zn,Cd)S:Ag,Cl,Al, and (Zn,Cd)S:Ag,Cl,Mg as taught by Matu. As disclosed by Matu in the Abstract, this would result in a higher luminance.

9. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (USPN 4,424,467) as applied to claims 1 and 6 above, and further in view of Matu (JP 52 030277).

10. With respect to claims 4 and 9, Masadu et al. do not disclose the green light-emitting phosphor is at least one sulfide based phosphor selected from the group consisting of ZnS:Cu,Al, ZnS:Cu, ZnS:Cu,Al,Au, (Zn,Cd)S:Cu,Al, (Zn,Cd)S:Cu and (Zn,Cd)S:Cu,Al,Au. Matu discloses this (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Masuda et al. invention and disclose the green light-emitting phosphor is at least one sulfide based phosphor selected from the group consisting of ZnS:Cu,Al, ZnS:Cu, ZnS:Cu,Al,Au, (Zn,Cd)S:Cu,Al, (Zn,Cd)S:Cu and (Zn,Cd)S:Cu,Al,Au as taught by Matu. As disclosed by Matu in the Abstract, this would result in a higher luminance.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (USPN 4,424,467) as applied to claim 6 above, and further in view of Hideto (Patent Abstracts of Japan 11-167868).

12. With respect to claim 11, Masuda et al. do not specifically disclose the phosphor layer is formed by depositing the phosphor mixture solution on the substrate with the application of electrophoresis, screening, photolithography or precipitation. Hideto discloses this (Means, paragraph 0015). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Masuda et al. invention and disclose the phosphor layer is formed by depositing the phosphor mixture solution on the substrate with the application of electrophoresis, screening, photolithography or precipitation, as taught by Hideto. These are all well known means in the art for depositing a mixture solution onto a substrate.

Art Unit: 2882

**Conclusion**


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 703 308-3535.

The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.

Jurie Yun  
November 6, 2002

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2200